

II. Listing of Claims

1. (Currently Amended) A hydrocarbon sensor for detecting hydrocarbons and a collector for collecting hydrocarbons in an air intake system of an engine, said sensor and collector comprising:

a purgeable hydrocarbon collecting element ~~capable of releasably absorbing hydrocarbons in the air intake system, said element being~~ positioned in the air intake system upstream from said engine;

said purgeable hydrocarbon collecting element having a plurality of chambers defined therein, said chambers arranged so as to allow air to pass through said purgeable hydrocarbon collecting element; and

~~said element operatively connected to~~ a detecting means for detecting the level of hydrocarbons ~~absorbed by~~ engaged with said purgeable hydrocarbon collecting element, the detecting means having a first portion connected to the purgeable hydrocarbon collecting element and a second portion connected to the purgeable hydrocarbon collecting element such that an electrical connection between the first portion and the second portion is completed by the purgeable hydrocarbon collecting element.

2. (Cancelled)

3. (Previously Presented) The hydrocarbon sensor and collector of claim 1, wherein said detecting means includes a plurality of wires connected to a diagnostic system.

4. (Currently Amended) The hydrocarbon sensor and collector of claim 3, wherein said wires are attached to said purgeable hydrocarbon collecting element with a conductive epoxy.

5. (Currently Amended) The hydrocarbon sensor and collector of claim 3, wherein said wires are molded to said purgeable hydrocarbon collecting element.

6. (Original) The hydrocarbon sensor and collector of claim 5, wherein said chambers are octagonal and arranged in a honeycomb pattern.

7. (Original) The hydrocarbon sensor and collector of claim 5, wherein said chambers are circular.

8. (Original) The hydrocarbon sensor and collector of claim 5, wherein said chambers are square.

9. (Currently Amended) The hydrocarbon sensor and collector of claim 1, wherein said purgeable hydrocarbon collecting element ~~absorbs~~ is configured to collect hydrocarbons in said chambers when said engine is not operating.

10. (Currently Amended) The hydrocarbon sensor and collector of claim 9, wherein said purgeable hydrocarbon collecting element ~~releases~~ is configured to release hydrocarbons when said engine is operating.

11. (Previously Presented) The hydrocarbon sensor and collector of claim 10, wherein said hydrocarbons are released as a result of an increased airflow present in said air intake system when said engine is operating.

12. (Currently Amended) The hydrocarbon sensor and collector of claim 11, wherein said purgeable hydrocarbon collecting element is formed from carbon mixed with a binder material.

13. (Original) The hydrocarbon sensor and collector of claim 12, wherein said binder material is gray clay.

14. (Original) The hydrocarbon sensor and collector of claim 12, wherein said binder material is ceramic.

15. (Currently Amended) The hydrocarbon sensor and collector of claim 11, wherein said purgeable hydrocarbon collecting element is formed from carbon.

16. (Previously Presented) The hydrocarbon sensor and collector of claim 1, wherein said wires are connected to a wheat stone bridge circuit.

17. (Currently Amended) A hydrocarbon sensor for detecting hydrocarbons and a collector for collecting hydrocarbons in an air intake system of an engine, said sensor and collector comprising:

~~[[an]] a purgeable hydrocarbon collecting element capable of absorbing and releasing hydrocarbons, said element~~ having a plurality of chambers defined therein to allow air to pass through said purgeable hydrocarbon collecting element and said purgeable hydrocarbon collecting element positioned in an intake system of an engine such that substantially all of the airflow entering said engine passes through said purgeable hydrocarbon collecting element; and

~~a circuit in communication with~~ including an electrical connector and said purgeable hydrocarbon collecting element, said circuit being configured to ~~and capable of detecting~~ detect the level of hydrocarbons absorbed by engaged with said purgeable hydrocarbon collecting element.

18. (Currently Amended) The hydrocarbon sensor and collector of claim 17, wherein said purgeable hydrocarbon collecting element is a purgeable hydrocarbon collecting carbon element.

19. (Original) The hydrocarbon sensor and collector of claim 18, wherein said circuit includes a wheat stone bridge.

20. (Original) The hydrocarbon sensor and collector of claim 19, wherein said circuit includes a microprocessor.

21. (Previously Presented) The hydrocarbon sensor and collector of claim 20, wherein said circuit is integrated with an on-board computer of the vehicle.

22. (Currently Amended) The hydrocarbon sensor and collector of claim 21, wherein said purgeable hydrocarbon collecting carbon element ~~absorbs~~ is configured to collect hydrocarbons when an evaporative airflow passes through said purgeable hydrocarbon collecting carbon element.

23. (Currently Amended) The hydrocarbon sensor and collector of claim 22, wherein said purgeable hydrocarbon collecting carbon element ~~releases~~ is configured to release hydrocarbons when a moderate to high airflow passes through said carbon element.

24. (Currently Amended) A method for releasably ~~absorbing~~ collecting hydrocarbons and detecting the level of hydrocarbons in an air intake system of an engine, said method comprising the steps of:

positioning a hydrocarbon absorbing element having a plurality of chambers arranged so as to allow air to pass through said element in the air intake system upstream from the engine;

operatively connecting said element to a detecting means for detecting the level of hydrocarbons in said element; and

detecting the level of hydrocarbons in said element.

25. (Currently Amended) The method of claim 24, further comprising the step of ~~absorbing~~ collecting hydrocarbons into said element when said engine is not operating.

26. (Currently Amended) The method of claim 25, further comprising the step of releasing said ~~absorbed~~ collected hydrocarbons when said engine is operating.

27. (Currently Amended) The method of claim 34 26, wherein the step of detecting the level of hydrocarbons in the element is performed by measuring the change in resistance of said element.

28. (Original) The method of claim 27, further comprising the step of defining chambers in said element.

29. (Previously Presented) The method of claim 28, wherein an airflow flows through said chambers and said chambers straighten said airflow as it flows through said element.

30. (Previously Presented) The method of claim 29, further including the step of adjusting the size and shape of said chambers and the thickness of said element.